2/12/2019

$$(A+B)^2 = A^2 + 2AB + B^2$$

$$(A-B)^2 = A^2 - 2AB + B^2$$

$$(A-B)(A+B) = A^2 - B^2$$

ESEMPIO

$$(x^2+2y)^2 = x^4 + 2\cdot x^2 \cdot 2y + 4y^2 = x^4 + 4x^2y + 4y^2$$

347 $(a+2b)^2 - (a-2b)^2 + (4ab+1)^2 - (4ab+1)(4ab-1) =$

$$= a^2 + 4ab + 4b^2 - (a^2 - 4ab + 4b^2) + 16a^2b^2 + 8ab + 1$$

$$- (16a^2b^2 - 1) =$$

$$= a^2 + 4ab + 4b^2 - a^2 + 4ab - 4b^2 + 16a^2b^2 + 8ab + 1$$

$$- 16a^2b^2 + 1 =$$

$$= \boxed{16ab + 2}$$

252

$$(2^n - 3^n)(2^n + 3^n)(4^n + 9^n) =$$

$$= \left((2^n)^2 - (3^n)^2\right)(4^n + 9^n) =$$

$$= (2^{2n} - 3^{2n})(4^n + 9^n) = (4^n - 9^n)(4^n + 9^n) =$$

$$= (4^n)^2 - (9^n)^2 = 4^{2n} - 9^{2n} = \boxed{16^n - 81^n}$$

USIAMO SOLO $(A+B)^2 = A^2 + 2AB + B^2$

299 $(-5a - b)^2 =$

$= (-5a)^2 + 2(-5a)(-b) + (-b)^2 =$

$= 25a^2 + 10ab + b^2$

$(-x + 3)^2 =$

$= (-x)^2 + 2(-x)\cdot 3 + 3^2 =$

$= x^2 - 6x + 9$

QUADRATO DEL TRINOMIO

$(A+B+C)^2 = (A+B+C)(A+B+C) = A^2 + AB + AC +$

$+ AB + B^2 + BC + AC + BC + C^2 =$

$= A^2 + B^2 + C^2 + 2AB + 2BC + 2AC$

$(2x - y + 1)^2 = 4x^2 + y^2 + 1 + 2(2x)(-y) + 2(-y)\cdot 1 + 2(2x)\cdot 1 =$

$= 4x^2 + y^2 + 1 - 4xy - 2y + 4x$